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EXAMINER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/644,992  
Filing Date: August 21, 2003  
Appellant(s): DALPIAZ ET AL.

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Adesh Bhargava  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 13 September 2007 appealing from the Office action mailed 27 November 2006.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

6,463,121 B1	MILNES	10-2002
6,233,310 B1	RELIHAN et al.	05-2001

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-4, 6-9, 11, 12, 14-19, 21, 22, 24, 25, and 27-29 are rejected under 35 U.S.C. 102(e) as being anticipated by Milnes (U. S. Patent No. 6,463,121 B1).

With regard to claims 1, 2, 9, and 15, Milnes disclosed a system for positioning dental x-ray apparatus, comprising: an input and output device (122) for interactive control (column 3, lines 47-64); a storage area (710, 725), in which at least one digitized dental x-ray image (when x-ray image comprises teeth) and information (the x-ray gantry and table positions) concerning

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the dental x-ray apparatus assignable to the digitized x-ray image are stored (column 4, lines 10-16); a computer interface (710), via which information can be interchanged with the dental x-ray apparatus; means (122) for selecting area in the digitized dental x-ray image; a processing unit (120, 710) which effects calculations based on the digitized dental x-ray image, the relevant information concerning the dental x-ray apparatus, and the selected area, in order to ascertain control data for controlling the dental x-ray apparatus (column 5, lines 43-55) such that the selected area is covered when a new dental x-ray image is made, the information concerning the x-ray apparatus comprises coordinates (the x-ray gantry and table positions) of a trajectory (from the present coordinates of the present image to the new coordinates of the next image) which have been saved in relation to the digitized x-ray image (column 4, lines 10-16), the processing unit further effects calculations of the trajectory which gives knowledge of movement of the dental x-ray apparatus carried out at a certain point of time.

With regard to claim 3, Milnes disclosed a system as defined in claim 1, wherein means for selecting the type of image (different portion of a patient) are provided.

With regard to claim 4, Milnes disclosed a system as defined in claim 1, further comprising means (720) for positioning a patient relatively to the x-ray apparatus, wherein the control data is adapted to control the means for positioning the patient (column 5, lines 46-55).

With regard to claim 6, Milnes disclosed a system as defined in claim 1, wherein the storage area includes current and/or voltage parameters saved in relation to the digitized x-ray image (x-ray tube control, Fig 8).

With regard to claim 7, Milnes disclosed a system as defined in claim 1, wherein the storage area includes information concerning gray tones in the representation of image saved in

relation to the digital x-ray image (This is inherent as a digital x-ray image comprises gray tone information).

With regard to claim 8, Milnes disclosed a system as defined in claim 1, wherein the processing unit includes computation for determining the control data which takes into account the type of image (position of the image).

With regard to claim 11, Milnes disclosed a system as defined in claim 1, further comprising means for automatically recognizing areas by pattern recognition algorithm (column 6, lines 3-63).

With regard to claim 12, Milnes disclosed a system as defined in claim 1, wherein the selecting means are designed such that areas can be selected manually (column 3, lines 47-56).

With regard to claim 14, Milnes disclosed a system as defined in claim 1, further comprising means (930) for making a series of radiograms at different positions starting from a selected position.

With regard to claims 16 and 17, Milnes disclosed a method of positioning one of an emitter (132) and a detector (142) of a dental x-ray apparatus using an existing digitized dental x-ray image and information concerning the dental x-ray apparatus and assignable to the digitized dental x-ray image, comprising the steps of: loading and displaying at least one panoramic digitized dental x-ray image (315); determining coordinates of areas, with reference to the digitized dental x-ray image, which are to be depicted in another x-ray image (320); loading information (the x-ray gantry and table positions) concerning the dental x-ray apparatus; carrying out computation (325) on the basis of the digitized x-ray image, relevant information concerning the dental x-ray apparatus, and a selected area, in order to ascertain control data which controls

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the dental x-ray apparatus such that the selected area can be depicted in a new dental x-ray image (column 4, lines 17-38), the information concerning the x-ray apparatus comprises coordinates (the x-ray gantry and table positions) of the trajectory (from the present coordinates of the present image to the new coordinates of the next image) which have been saved in relation to the digitized x-ray image (column 4, lines 10-16), and a segment of the trajectory is calculated on the basis of the selected area (column 5, lines 43-49), and the trajectory gives knowledge of movement of the dental x-ray apparatus carried out at a certain point of time (this is simply the definition of a trajectory).

With regard to claim 18, Milnes disclosed a method as defined in claim 16, wherein the type of image (different portion of a patient) to be made by the x-ray apparatus is selected prior to the step of loading information concerning the dental x-ray apparatus.

With regard to claim 19, Milnes disclosed a method as defined in claim 16, wherein the control data is adapted to control means for positioning the patient relative to the x-ray apparatus (column 5, lines 46-55).

With regard to claim 21, Milnes disclosed a method as defined in claim 16, wherein the computation step includes one of a current and voltage parameters which are saved in relation to the digitized x-ray image (x-ray tube control, Fig. 8).

With regard to claim 22, Milnes disclosed a method as defined in claim 16, wherein the computation for determination of the control data takes into account one of the type of examination and the purpose of diagnosis of the patient (the location of the image).

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With regard to claim 24, Milnes disclosed a method as defined in claim 16, wherein the computation step includes automatically recognizing areas by pattern recognition (column 6, lines 3-63).

With regard to claim 25, Milnes disclosed a method as defined in claim 16, wherein the areas can be determined manually (column 3, lines 47-56).

With regard to claim 27, Milnes disclosed a method as defined in claim 16, further comprising the step of making a series of radiograms (930) at different positions starting from the selected position.

With regard to claim 28, Milnes disclosed a system as defined in claim 11, wherein the areas are teeth (the system tracks changes in position of any object, column 6, lines 3-63).

With regard to claim 29, Milnes disclosed a method as defined in claim 24, wherein the areas are teeth (the system tracks changes in position of any object, column 6, lines 3-63).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 10, 13, 23, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Milnes (U. S. Patent No. 6,463,121 B1) as applied to claims 1 and 16 above, and further in view of Relihan *et al.* (U. S. Patent No. 6,233,310).



With regard to claims 10 and 23, Milnes disclosed a system as defined in claim 1 and a method as defined in claim 16. However, although Milnes disclosed a storage area that includes patient-dependent data (patient management, Fig. 8), Milnes fails to teach that this information is taken into account when determining the control data.

Relihan *et al.* disclosed an x-ray exposure management and control system. Relihan *et al.* taught that control data are generated based on patient size (column 4, lines 35-55). As a result, optimal image quality is achieved (column 3, lines 57-67).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to determine the control data using patient-dependent data, since a person would be motivated to obtain high-quality images of a patient.

With regard to claims 13 and 23, Milnes in combination with Relihan *et al.* disclosed a system as defined in claim 10 and a method as defined in claim 23, wherein the processing unit includes one of statistical and stochastic linkings (neural network) of the patient-dependent data (column 6, lines 1-49).

#### **(10) Response to Argument**

With respect to the rejection of claims 1, 2-4, 6-15, and 28 as being anticipated by Milnes (U. S. Patent No. 6,463,121 B1), the appellants argue that Milnes failed to disclose a system that comprises a processing unit as claimed. Specifically, the appellants refer to a system disclosed by Milnes that automatically follows a tip of a catheter or a contrast agent (column 6, lines 43-57), which is considered by the appellants as evidence that Milnes failed to disclose a processing unit as claimed. The examiner respectfully disagrees. In addition to the automatic system

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mentioned above, Milnes disclosed a manual system that comprises a means (122) for selecting an area (column 3, lines 47-64). Fig. 6A depicts using a pointer to select an area (610) relative to other digitized x-ray images (602, 604, 606, 608) for the next x-ray exposure (column 5, lines 1-15). After an area is selected, a processing unit (120, 710) moves the x-ray apparatus to the selected area to acquire the next x-ray image (column 5, lines 1-15, lines 43-55). Each x-ray image is saved with the position of the x-ray apparatus where the x-ray image is taken (column 4, lines 10-16). The appellants assert that the processing unit disclosed by Milnes does not effect calculations of a trajectory, which gives knowledge of movement of the x-ray apparatus carried out at a certain point in time. This argument fails to consider the processes/steps necessary to carry out moving the x-ray apparatus from the present position of the x-ray apparatus, which corresponds to a position where one of a plurality of digitized x-ray images (602, 604, 606, 608) was acquired, to the next position where a new x-ray image (610) will be acquired. To implement such a move, a definite trajectory, which consists of the present position, the next position, and all the intermediate positions connecting the present position and the next position, must be determined. In other words, the x-ray apparatus must move continuously and sequentially from the present position to the next position through all of the intermediate positions along a predetermined trajectory. Furthermore, such a trajectory could only be calculated *a priori* since it would not be possible to preprogram a trajectory in response to a totally random selection of an area by a user. Without a fixed trajectory, control data could not be generated to control the x-ray apparatus because there are an infinite number of trajectories (*e. g.*, a straight line, multiple straight lines, multiple curves) that could connect the present position

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and the next position. Therefore, the processing unit disclosed by Milnes must calculate a trajectory that consists of positions of the x-ray apparatus as a function of time.

With respect to the rejection of claims 16-19, 21, 22, 24, 25, 27, and 29 as being anticipated by Milnes (U. S. Patent No. 6,463,121 B1), the appellants argue that Milnes failed to disclose a method that comprises carrying out computation on the basis of the digitized x-ray image, relevant information concerning the dental x-ray apparatus, and a selected area, in order to ascertain control data which controls the dental x-ray apparatus such that the selected area can be depicted in a new dental x-ray image, the information concerning the x-ray apparatus comprises coordinates of the trajectory which have been saved in relation to the digitized x-ray image, and a segment of the trajectory is calculated on the basis of the selected area, and the trajectory gives knowledge of movement of the dental x-ray apparatus carried out at a certain point of time. The examiner respectfully disagrees for the same reason set forth above.

The appellants do not separately argue the rejection of claims 10, 13, 23, and 26 under 35 U.S.C. 103(a) as being unpatentable over Milnes (U. S. Patent No. 6,463,121 B1) as applied to claims 1 and 16 above, and further in view of Relihan *et al.* (U. S. Patent No. 6,233,310). Therefore, these claims are considered to be unpatentable for the reason set out in the rejection of record.

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**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

*Allen C. Ho*

Allen C. Ho

Conferees:

Ed Glick



Georgia Y. Epps

